



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/005,577 | 12/03/2001 | Steven M. Lefkowitz | 10980852-1 | 8145 |

| EXAMINER |
|-----------------|
| FORMAN, BETTY J |

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 1634 | |

AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

7590 12/05/2003

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/005,577 | Applicant(s) LEFKOWITZ ET AL. | |
| | Examiner BJ Forman | Art Unit 1634 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
 4a) Of the above claim(s) 1-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL ACTION

Status of the Claims

1. This action is in response to papers filed 27 August 2003 in which claims 31-32, 36, 39-41 and 47-48 were amended and Fig 1 was amended. All of the amendments have been thoroughly reviewed and entered.

The previous objections and rejections in the Office Action dated 27 May 2003 are withdrawn in view of the amendments.

All of the arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new grounds for rejection. New grounds for rejection necessitated by amendment are discussed.

Claims 31-48 are under prosecution.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 32 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1634

Claims 32 and 41 are indefinite because the claim has been amended to recite "a portion of said biomolecule is exogenous to said biomolecule". However, it is unclear how a biomolecule can have an exogenous portion as claimed because a molecule is a single entity. It is unclear how a single molecule can have a portion exogenous (outside) itself and still be that single molecule.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 31-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Klaerner et al (U.S. Patent Application Publication No. 2002/0001845, filed 24 July 2001).

Regarding Claim 31, Klaerner et al disclose a process for preparing a solid support comprising providing a solid support comprising a surface coating having a reactive site (i.e. initiator, ¶ 73-76 and Example 2: ¶ 219), contacting the surface coating with a plurality of monomers (¶ 124 and Example 1 & 2: ¶ 217 and 220), and polymerizing the monomers to produce a solid support having a surface tethered polymer covalently linked to the surface coating, said polymer having at least one adsorbing moiety for non-covalent attachment of a biomolecule (¶ 123, especially, lines 10-15).

Art Unit: 1634

Regarding Claim 32, as stated above, it is unclear how the biomolecule contains an exogenous portion. For purposes of examination, the claim is interpreted as being drawn to a biomolecule being modified to provide for exogenous attachment as defined in the specification (page 1, last line, through page 2). Klaerner et al disclose the process wherein the biomolecules are modified to provide exogenous attachment (i.e. chemical hook, ¶ 138).

Regarding Claim 33, Klaerner et al disclose the method wherein a portion of the biomolecule is an exogenous linking moiety (i.e. chemical hook, ¶ 138).

Regarding Claim 34, Klaerner et al disclose the method wherein the polymer is substantially linear (¶ 116, line 1).

Regarding Claim 35, Klaerner et al disclose the method wherein the polymer is a vinyl polymer (¶ 125-126).

Regarding Claim 36, Klaerner et al disclose the method wherein the adsorbing moiety is an amine group (¶ 123).

Regarding Claim 37, Klaerner et al disclose the method wherein the vinyl polymer is poly-vinylamine (i.e. vinyl imidazole, ¶ 126, next to last line).

Regarding Claim 38, Klaerner et al disclose the method wherein the biomolecule comprises an oligonucleotide or polynucleotide (¶ 135-138).

Regarding Claim 39, Klaerner et al disclose the method further comprising polymerizing additional non-nucleotidic polymer tethered to the surface coating said polymer comprising additional adsorbing moieties (i.e. a plurality of polymers each attached to a biological probe, ¶ 28).

Regarding Claim 40, Klaerner et al disclose a process for preparing a solid support comprising providing a solid support comprising a surface coating having reactive sites (i.e. initiator, ¶ 73-76 and Example 2: ¶ 219), contacting the surface coating with a plurality of monomers (¶ 124 and Example 1 & 2: ¶ 217 and 220), and polymerizing the monomers to produce a solid support having a surface tethered polymer covalently linked to the surface

Art Unit: 1634

coating, said polymer having adsorbing sites for non-covalent attachment of a biomolecule (§ 123, especially, lines 10-15) wherein the polymer is capable of assuming a plurality of conformations and exhibits sufficient mobility and flexibility such that the number of biomolecule adsorbed is maximized (§ 31-32, 45-48) and contacting the surface with the probe biomolecules (Example 19: § 262-263).

Regarding Claim 41, as stated above, it is unclear how the biomolecule contains an exogenous portion. For purposes of examination, the claim is interpreted as being drawn to a biomolecule being modified to provide for exogenous attachment as defined in the specification (page 1, last line, through page 2). Klaerner et al disclose the process wherein the biomolecules are modified to provide exogenous attachment (i.e. chemical hook, § 138).

Regarding Claim 42, Klaerner et al disclose the method wherein a portion of the biomolecule is an exogenous linking moiety (i.e. chemical hook, § 138).

Regarding Claim 43, Klaerner et al disclose the method wherein the polymer is substantially linear (§ 116, line 1).

Regarding Claim 44, Klaerner et al disclose the method wherein the polymer is a vinyl polymer (§ 125-126).

Regarding Claim 45, Klaerner et al disclose the method wherein the adsorbing moiety is an amine group (§ 123).

Regarding Claim 46, Klaerner et al disclose the method wherein the vinyl polymer is poly-vinylamine (i.e. vinyl imidazole, § 126, next to last line).

Regarding Claim 47, Klaerner et al disclose the method wherein the biomolecule comprises an oligonucleotide or polynucleotide (§ 135-138).

Regarding Claim 48, Klaerner et al disclose the method further comprising polymerizing additional non-nucleotidic polymer tethered to the surface coating said polymer comprising additional adsorbing moieties (i.e. a plurality of polymers each attached to a biological probe, § 28).

Art Unit: 1634

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Conclusion

7. No claim is allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878 until 13 January 2004. Starting 14 January 2004, the examiner's phone number will be (517) 272-0741. The examiner can normally be reached on 6:00 TO 3:30 Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.


BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
December 1, 2003